DOCUMENT RESUME

ED 026 572 AC 003 187

By-Bolman, Lee

Laboratory Education in a University Executive Program.

Pub Date [68]
Note-45p.
EDRS Price MF-$0.25 HC-$2.35
Descriptors-Analysis of Variance, Behavior Change, *Business, Changing Attitudes, *Chief Administrators, Conformity, *Group Discussion, Interpersonal Competence, *Laboratory Training, *Lecture, Research, Retention, Self Evaluation, Transfer of Training

Four different sessions of an educational program for business executives were studied to compare the differential effects of laboratory human relations (T-group) training versus a lecture-discussion approach to interpersonal relations in organizations. Both types of programs produced equal change in participants' stated beliefs about effective interpersonal behavior. Laboratory training showed greater effects on participants' perceptions of themselves and on their behavior as analyzed from tape recordings of case-discussion meetings. There was, however, evidence that the participants had difficulty transferring learning from the T-group to other parts of the program, and that there was considerable "fade-out" of the effects of the training. (The document includes footnotes, 13 references, and 16 tables and figures.) (author/ly)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED026572

# Laboratory Education In A University Executive Program[1]

Lee Bolman[2]

Department of Administrative Sciences

Yale University

Lee Bolman
Graduate School of Industrial Administration
Carnegie-Mellon University
Pittsburgh, Pennsylvania 15213

## ABSTRACT

Four different sessions of an educational program for business executives were studied to compare the differential effects of laboratory human relations (T-group) training versus a lecture-discussion approach to interpersonal relations in organizations. Both types of programs produced equal change in participants' stated beliefs about effective interpersonal behavior. Laboratory training showed greater effects on participants' perceptions of themselves and on their behavior as analyzed from tape recordings of case-discussion meetings. However, there was evidence that the participants had difficulty transferring learning from the T-group to other parts of the program, and that there was considerable "fade-out" of the effects of the training.

The popularity of laboratory human relations training has increased enormously in the last several years, and its use has spread to a wide variety of settings and target populations. This tread toward increased popularity has been greeted with enthusiasm in some quarters and consternation in others, but has inevitably increased the demand and the need for more research on what laboratory training is and does. The current study focused on what it does when used as one of two alternative methods of trying to increase business executives' competence to deal with interpersonal phenomena. Two sessions of a university program for business executives which included laboratory training were compared with two sessions of the same program in which the topic of interpersonal behavior was treated through lectures, case discussions and readings.

On the basis of numerous studies of business organizations, Argyris (1962, 1966) has suggested that executives in our culture tend to hold the following beliefs: (1) examination of interpersonal behavior--particularly affective behavior--is neither relevant nor useful in a business context; (2) interpersonal difficulties and interpersonal influence are most effectively handled through the use of formal power and reward-penalty systems. Argyris further asserts that these beliefs are inaccurate and that they result in an inability to perceive and deal effectively with a number of kinds of interpersonal problems which interfere with organizational effectiveness.

A person's beliefs about himself and his ways of perceiving and relating to other people are deeply rooted in his learning history

and tend to be difficult to change. A generalization from learning theory leads to the prediction that an educational process will alter only those aspects of a person's behavior which are affected by the reinforcement contingencies of the particular educational method.[3] In a program which treats interpersonal relations through the use of lectures, case discussions, and readings, a person's own interpersonal behavior and self-perceptions are not ordinarily at issue, and would not be expected to change. What is at issue in such a method are a person's verbal statements about interpersonal behavior; it is these latter which are more likely to change. The changes may be short-lived, however, both because the reinforcement contingencies are likely to be different once the educational program is over, and because the newly-acquired beliefs are likely to be at variance with the person's behavior and his attitudes toward himself.[4]

In laboratory training, on the other hand, a person's interpersonal behavior, his perceptions of himself, and his perceptions of others are ordinarily at issue. The primary educational device in this form of training is the "T-group," a small group which has the following two important characteristics: (1) the person occupying the formal leadership role refrains from performing many of the functions usually considered appropriate to the leader's role. This creates, initially, an unsettling vacuum with respect to leadership, agenda, and direction. (2) The primary purpose of the group generally centers on an attempt to learn more about interpersonal behavior--particularly the behavior of the group members--by examining and trying to understand the behavior which is generated within the

group. The reinforcement contingencies in the situtation tend to encourage each group member to express his perceptions of other group members and of himself, and to listen to their perceptions of him. If the group is able to carry out these activities effectively, changes in behavior and self-perception become likely. There is no guarantee, however, that the learning will be carried over to other situations. Indeed, the greater the extent to which the T-group experience differs from other situations in which a person finds himself, the less likely it is that he will transfer behavior from the one situation to the other.[5]

The T-group tends to create a situation in which feelings and emotions are far more salient than ordinarily, and one possible result of an effective group is that its members become more sensitive to their own and others' feelings, more competent to express their feelings, and more able to cope with the expression of feelings by others. For most members, the T-group also creates a situation in which feedback about the results of their behavior is far more available than in most settings. If this feedback is given in ways which minimze the defensiveness of the recipient, and if the recipient is undefensive enough to listen to it and learn from it, the result can be an increase in a person's competence to deal with relatively stressful inputs from other people and in his belief that confronting potentially threatening 'data' can be productive.

Still a third possible consequence of laboratory training stems from the way in which power and authority are handled. The formal 'leader' largely abdicates this role in the group and creates a

situation in which the group must find some other way to deal with problems of decision-making and allocation of power. If the group is able to develope a method which works effectively without centering power in the hands of one or a few individuals (as many groups do), the result is experiential learning abut the potentialities in collaborative approaches to decision-making.

The purpose of the study was to determine whether the effects anticipated for the laboratory were more strongly present in the sessions of the executive program which included this form of training than in those which did not. The discussion above implies the following kinds of differences between programs with laboratory training and those without it: (1) laboratory participants would believe more strongly in the expression and exploration of feelings; (2) laboratory participants would place more emphasis on collaborative procedures for allocating power and would place less faith in the effectiveness of coercive influence techniques; (3) the laboratory participants would show greater openness to new or potentially threatening information. In each of these three areas it was anticipated that the differences between the two kinds of programs would be strongest in the areas of behavior and self-perceptions, less strong in the area of verbally-expressed beliefs about interpersonal behavior.

## METHOD

### Subjects and setting

The subjects for the study were the participants in four different six-week sessions of a university-sponsored, residential program for business executives. The programs were held in a relatively

isolated, rural setting, and drew a population of upper and upper-middle level managers. All of the participants were male; most were from business organizations in the United States and Canada, but approximately ten percent of the participants in each session of the program were from various other foreign countries.

The sessions of the program used in this study consisted of the Spring and Summer programs for each of two consecutive years. Both of the two Spring sessions included a week of laboratory training at the beginning of the program, and were designated as the experimental sessions. The summer sessions did not include laboratory training and were designated the control sessions. In the latter, the second week of the program was devoted to lectures, group discussions, and readings on interpersonal relations, including a day of lecture and discusssion led by an exponent of the laboratory approach. There were 57 participants in the first and 62 participants in the second experimental session, while the two control sessions had 38 and 59 participants, respectively. Aside from the differences already discussed, the program was essentially the same in all four sessions. For the most part, the same faculty members treated the same topics in each session. A variety of topics was covered (e.g., various aspects of the internal administration of a business organization, the relationship of business to other institutions in the economy and the culture, the impact of advances in science and technology on business, etc.), with faculty members drawn from universities, business and government.

There are some differences in research design between the two years in which the study was carried out, and a distinction is made between the two sessions which met in the first year (one experimental session and one control), which are referred to as Study I, and the two sessions which met in the second year, which are referred to as Study II.

Measures and Research Design

The data for the study were derived both from questionaires filled out by the participants at various points in the program, and from tape recordings of small group meetings. Table 1 presents an overview of the research design. Each of the measures is discussed below:

---Insert Table 1 about here---

Analysis of Personal Behavior in Groups (APB)---This questionaire was administered three times to participants in every session: before they arrived at the program, after the interpersonal-relations phase, and at the end of the program. However, the middle administration was omitted in the Study I control session, and a modified Solomon-type design was used in the Study I experimental session to test for effects due simply to repeated administrations or to interactions between test and treatment (no such effects were discovered).[6] The APB is a 14-item instrument which has been in common use both as a research and training device in human relations laboratories. The items asked the respondent to describe his own behavior in group situations along a number of different dimensions. Two scales, each consisting of four items (all unit-weighted) were

derived from the instrument. One of these was a measure of ability to cope with emotions (it is referred to as the APB feelings scale), and consisted of the participant's self-rating on the following items: (1) ability to express feelings in a group; (2) tendency to seek close personal relations with others in a group; (3) tolerance of the expression of affection and warmth in a group; (4) tolerance of the expression of conflict and antagonism in a group. Test-retest correlation of this scale (for two administrations six weeks apart in the control sessions) was .69. The second APB measure is referred to as the APB openness scale and consisted of the following items: (1) ability to listen understandingly to others; (2) willingness to be influenced by others; (3) openness to comments about my own behavior; (4) openness to opinions opposed to mine. Test-retest correlation was .77.

Managerial Behavior Questionnaire (MBQ)---This instrument, which was used only in Study I (the first year), presented the respondent with several hypothetical situations which might arise in a business setting and asked him to write a short answer indicating how he would handle them. The situations had in common that all involved the intrusion of interpersonal difficulties upon an organizational task. A content-analysis procedure was developed to score these instruments which provided a measure of the extent to which each respondent adhered to the set of beliefs that Argyris (1962) has referred to as the pyramidal values--(1) the only relevant human relationships are those involved in accomplishing the organizational objectives; (2) emotions interfere with rationality and should be avoided or suppressed;

(3) people are most effectively influenced through the use of formal power and reward-penalty systems. The inter-rater reliability of the content analysis appeared to be adequate as indicated by a correlation (Pearson's r) of .91 between the ratings of the author and the independent rater on a sample of 10 respondents. The test-retest correlation for two administrations to the Study I control group six weeks apart .54. More information about the nature of the MBQ and of the scoring procedures can be found in Argyris (1966, pp. 20-31).

Managerial Experiences Questionnaire (MEQ)---This questionaire was used only in the second year and was intended to be a more precise measure of the dimensions tapped by the MBQ. It is different from the latter instrument in two ways: (1) the open-ended format of the MBQ was replaced by a series of multiple-choice items; (2) whereas the MBQ asked the respondent what he would do in a given situation, the MEQ asked him what he though would be the most effective way to behave in a given situation. The 18 items of the MEQ were factor analyzed and the two largest factors following Varimax rotation were used in the study. For the first of these factors, confrontation of interpersonal issues (designated the MEQ confrontation scale), the highest-loading items were the following: group effectiveness increases when personal feelings are openly discussed (.89); when personal antagonism arise in a business meeting, the leader should encourage an open discussion of people's feelings (.89); a group can increase its effectiveness by departing from the agenda to discuss how members are working with one another (.76).

The second factor, which is referred to as the MEQ formal power scale, had the following as its highest-loading items: when a group is deeply divided, the leader should make a decision and persuade everyone to accept it (.76); people work best when clear rewards and penalties are attached to effective or ineffective performance (.71); a group progresses best when the leader controls the discussion (.61).

Questionaire on Group Functioning (QOGF)---This 18-item questionaire was used to measure group members' reactions immediately after group meetings. It was intended as a measure of the degree of integration or synergy present in a meeting--i.e., the extent to which the group was functioning as an integrated whole, with members facilitating the achievement of both group and individual goals. A slightly different version of this instrument was used in Study II than in Study I, but the differences were not of major importance to the study.

Behavior Scores---The behavior scores were based on tape recordings of T-group meetings and small group discussions (usually case discussions). In each of the sessions, small discussion groups were used frequently. These groups had approximately 12 members, were usually leaderless (although in some instances a participant was designated as leader by the faculty), and met to discuss a case assigned by the faculty. In each of the experimental sessions, one set of meetings shortly after the laboratory and one set of meetings near the end of the program were tape recorded and coded. A set of meetings refers to four or five small groups each discussing the same case at the same time. In the control sessions, sets of meetings from the first,

second, fourth or fifth, and sixth week of the program were recorded and analyzed. In both of the experimental sessions, all T-group meetings were recorded; all of these were analyzed in Study I, and about one-third were analyzed in Study II.

The tapes were coded using a system developed by Argyris (1965, 1965b) which is intended to provide a measure of the interpersonal competence present in a group. Although this procedure provides measures of several different aspects of interpersonal behavior, only one is discussed in detail here--the category of behavior which Argyris labels "conformity.". Another important dimension in the Argyris procedure centers on the extent to which feelings are openly discussed in a meeting. This dimension was not used here because behavior of this type was so rare in case discussions as not to provide stable comparisons across different groups. "Conformity" is scored for behavior which is inferred to restrict the range of alternatives available to persons within an interpersonal system. It includes direct orders or demands, evaluations of others or of their contributions when it is implied that the speaker's criteria for evaluation are universal or unquestionable, categorical or blanket statements, statements telling people how they should behave or think, and similar behavior. The measure used to compare different groups was the proportion of the behavior in a meeting which was categorized as conformity. For Study I, all tapes were scored by the author. In Study II, all tapes were scored by a second scorer trained by the author. In both cases, the tapes were scored in a random order and with no identifying information other than that provided by the tape itself. In case discussions, which usually lasted slightly less

than an hour, two non-overlapping, 15-minute periods were randomly selected from the tape, and all behavior within each period was scored. Reliability checks between the two scorers indicated average unit-by-unit agreement as to presence of conformity to be 76%.

## RESULTS

### Self-perceptions

The APB provided measures of the participants' perceptions along two dimensions: (1) ability to deal with emotions in a group setting; (2) openness to information and influence from others. Figures 1 and 2 graph the means on these variables for the experimental and control sessions.

For the APB feelings scale, the graph indicates essentially no difference between the experimental and control sessions prior to the program (the F-ratio for the test of this difference was less than 1.0). The experimental sessions showed a considerable rise from the first to the second administrations (the second administration in every case was within a week after the human relations phase of the program), and a moderate dropoff to the final measure, which was given near the end of the program. The pattern for the control sessions showed essentially no change. The increase from the initial to the final measures was significant at the .01 level for the experimental sessions ($F = 15.58$ with 1 and 72 d.f.), and non-significant for the control sessions ($F = 2.64$ with 1 and 82 d.f.).[7] To test the hypothesis that the experimental sessions differed from the control sessions on the final measure, while controlling for initial scores,

an analysis of covariance was performed, using the initial measure as the covariate (for a discussion of this use of covariance analysis, see Lord, 1963). The results of this analysis for the APB feelings measure appear in Table 2, and suggest that the laboratory training had a statistically significant ($p<.01$) effect on the participants' perception of their competence to deal with their own and others' feelings. The analysis gave no evidence of reliable differences between the two different years of the program, nor of an interaction effect (which, if present, would indicate that the effects of the experimental-control distinction were not consistent across the two years of the study).

---Insert Figures 1 and 2 about here---

---Insert Tables 2 and 3 about here---

For the APB openness scale, there was again no reliable difference between experimental and control sessions prior to the program (F-ratio was less than 1.0). As figure 2 indicates, the pattern for the experimental sessions on the openness scale was similar to that for the feelings scale, with a rise between the first two administrations and a moderate decrease thereafter. The control sessions showed approximately the same net change as the experimental sessions, but the pattern was different in that the control sessions show a steady upward trend across the three administrations. The increase from the first to the final administrations was significant beyond the .01 level for both the experimental and control sessions (F-ratio of 8.07 with 1 and 72 d.f. for the experimental sessions; F-ratio of 8.07 with 1 and 82 d.f. for the control sessions). The

results of an analysis of covariance to test for differences between the experimental and control sessions on the final measure appear in Table 3. They indicated no reliable difference between the two kinds of session, and no evidence of an interaction. There was a reliable difference between Study I and Study II, reflecting the fact that the participants' perceptions of their own openness tended to be higher, both initially and finally, in the session which met the second year.

Beliefs about interpersonal behavior

In Study I, a measure of the extent to which the participants adhered to Argyris's pyramidal values was obtained from the MBQ. The results from this instrument appear graphically in Figure 3, where high scores indicate an orientation <u>away</u> from the pyramidal values, i.e., away from beliefs that interpersonal issues and emotions should be suppressed and that the primary influence techniques in an organization involve the use of formal power and reward-penalty systems. A middle measure was not available for the control session, which showed essentially no change between the first and final administrations. The experimental session showed a substantial increase from first to second administrations, with a slight decline thereafter. The increase from the first to the final administrations is significant at the .01 level for the experimental session ($F = 9.73$ with 1 and 65 d.f.). An analysis of covariance was performed to test the difference between the two sessions on the final measure, and the results appear in Table 4, indicating that the difference between the two sessions was significant

at the .001 level.

---Insert Figure 3 about here---

---Insert Table 4 about here---

In Study II, the MEQ was used as a measure of beliefs about interpersonal behavior, and provided factor-analytic measures of the extent to which participants favored confronting interpersonal issues, and of their belief in the use of formal power as an influence technique. The results for the two MEQ variables are presented graphically in Figures 4 and 5. For the confrontation measure, both sessions tended to increase between the first and second administrations and decrease thereafter. The graph also indicates that the observed mean for the experimental session on the initial measure was somewhat higher than that for the control session, the difference achieving statistical reliability at the .25 level ($F = 1.77$ with 1 and 92 d.f.). The increase from the initial to the final measure was significant at beyond the .01 level for the experimental session ($F = 13.42$ with 1 and 182 d.f.) and at the .05 level for the control session ($F = 6.54$ with 1 and 182 d.f.). An analysis of covariance was used to test the difference between the two sessions on the final measure, with the initial measure used as a covariate. The results, appearing in Table 5, indicated that the differences between the two sessions achieved statistical reliablity only at the .25 level.

---Insert Figures 4 and 5 about here---

---Insert Tables 5 and 6 about here---

The trends on the MEQ formal power measure were similar, except that both sessions decreased between the first and second administrations, and increased thereafter. In other words, the participants' tendency to favor the use of formal power as a means of influence decreased between the first two administrations and then increased. The net decrease between initial and final measures was significant at the .01 level of the experimental session ($F = 13.02$ with 1 and 182 d.f.), nonsignificant for the control session (F - ratio less unity). The two sessions did not differ reliably on the initial measure ($F = 1.69$ with 1 and 91 d.f.), but the analysis of covariance, presented in Table 6, indicates that the difference between the sessions on the final measure achieved statistical reliability at the .95 level.

Group Effectiveness

The QOGF provided a questionnaire measure of the extent to which the participants in small group meetinsg perceived the group as functioning effectively, with particular emphasis on the extent to which inidviduals' behavior and goals were consonant with the attainment of the group's task. The results from this measure are graphed for Study I in Figure 6, and for Study II in Figure 7. Figure 6 indicates that,if anything, the participants in the control session tended to see their groups as more effective than did the participants in the experimental session. However, the only point at which the difference between the two sessions achieved statistical reliability was the first on the graph, when

the comparison was between an early case discussion in the control session, and an early T-group meeting in the experimental session. Since early T-group meetings are frequently disorganized and even chaotic, such a finding is not surprising. In Study II, the participants in the experimental session tended to see their meetings as somewhat more effective than did the control session participants shortly after the human relations phase of the program, but somewhat less effective near the end of the program. However, neither of these differences was statistically reliable. Overall, the statistical analyses indicated that there were more differences among individual case groups than differences between sessions.

Observed conformity

The analysis of tape recordings of T-group and case discussion meetings provided a measure of the proportion of behavior in a meeting characterized by conformity, as that category was defined earlier. It was anticipated that a successful laboratory would result in a reduction in conformity, and that this reduction would carry over into subsequent case discussion meetings. In Figure 8, the conformity pattern during the laboratory is graphed for the Study I and Study II experimental sessions. The graph indicates a steady downward trend in proportion of conformity in Study I but not in Study II. In the latter, initial level of conformity was higher, some reduction was achieved by the middle of the lab, but the final measure was very similar to the initial one. Near the end of the week of laboratory training, the T-groups in Study II

were producing approximately twice as much conformity as their Study I counterparts.

The differences noted near the end of the laboratory seemed to carry over into the subsequent weeks, as is indicated by Figures 9 and 10, which graph the conformity scores for case discussion groups in Studies I and II respectively. The data from the two studies were separated because they differed both in pattern and in absolute magnitude. Study II produced a higher average level of conformity than Study I, which may have been due to differences in the participants. On the initial APB administration,the participants in Study II tended to rate themselves somewhat lower than the participants in Study I on competence to deal with feelings and on openness to influence. In each of the two separte years, the experimental session produced less conformity on the average than did the control session, but the Study II experimental session actually had a slightly higher mean level of conformity than the Study I control session.

The lowest average conformity level in case discussions was produced by the Study I experimental group. This is consistent with the data internal to the laboratory which were interpreted to indicate that the Study I laboratory was more successful on the whole than the Study II laboratory. The absence of pre-laboratory behavior data makes it difficult to be certain of the magnitude of the effect produced by the laboratory. The comparability of the sessions on other measures is consistent with the assumption that the differences between experimental and control participants did not ante-date the laboratory. The only data available on the relationship

between scores in initial T-group meetings and behavior prior to laboratory comes from a study of the same program by Argyris (1965b), where he found amount of conformity dropping by approximately 25% from pre-laboratory case-discussion groups to initial T-group meetings. In this study, the case discussions in the first week of the program showed an average conformity level of 57.8%. A laboratory program was held in the second week, and the average level of conformity in the initial T-group meetings was 32.5%. If the data from Argyris's study provide a reasonable estimate of the drop in conformity produced by the ecology of the laboratory setting, it is likely that the pre-laboratory conformity level in the experimental session was as high or higher than in the control session in each of the two years of study.

Follow-up study

To assess any differential effects of the laboratory on back-home behavior, a follow-up study was made of the participants in the Study I experimental and control sessions, using the methodology developed by Bunker (1965). Each participant in the experimental and control sessions was asked (approximately four months after attending the program) to reply to a short, open-ended questionnaire which asked him in what, if any, ways he had changed in his ways of working with others. He was also asked to suggest the names of several business associates to whom the same questionnaire could be sent. In the experimental session 41 of 57 persons returned the self-rating questionnaire, and 32 of these provided names of business associates. In the comparison session, 28 of 38 returned the self-

description, but only 18 persons provided names of associates. Return of questionnaires by business associates ran better than 80% in both groups. However, the fact that approximately half of the participants in each session did not provide the names of business associates left considerable room for self-selection bias.

Bunker, on the basis of the replies he received to his questionnaire, developed a set of categories for analysis of the responses. In the present study, the published description of these categories was used as the basis for content-analysis of the questionnaire returns. All questionnaires were scroed blind and in a random order by the author, and each response was scored for the presence or absence of the 15 scoring categories developed by Bunker.

For both the self-ratings and the ratings by business associates, differences between experimental and control participants were tested for statistical significance for each of the 15 categories. Overall, there was little evidence of strong difference between the two groups. In their self-ratings, the experimental participants reported reliably more change (significant at the .05 level) in awareness of human behavior, acceptance of others, tolerance of new information, and comfort in interpersonal situations. The control participants reported a significantly greater number of global, non-specific changes (e.g. "I'm more mature."). There were no reliable differences in the remaining 10 categories.

The data from the business associates gave no evidence of reliable differences between the groups. None of the categories showed differences at the .10 level (which is less than would be expected by chance, with 15 categories). This result is considerably different from Bunker's (1965) result, and from the results of Valiquet's (1968) study, which replicated Bunker's results.

There are a number of factors which could account for this failure to replicate Bunker's findings, including the following: (1) the sample size in this study was considerably smaller than in Bunker's; (2) Bunker's subjects had attended more extensive laboratory programs; (3) Bunker's comparison group consisted of inidividuals nominated by the laboratory participants, and most of them had not attended an educational program of any kind; (4) there may have been differences in the procedures for coding responses to the questionnaire. Unravelling some of these possiblities will require better-controlled research and more sophisticated conceptual schemes for predicting the conditions under which laboratory training is likely to have effects on back-home performance. These conditions presumably include characteristics of the person, of the training, and of the organization or social setting to which he returns.

## DISCUSSION

The introduction to this paper made the following two assumptions: (1) an educational process is likely to change only those behaviors which are actually at issue in the process; (2) the durability of any change depends on the consistency of the reinforcement contingencies between learning setting and the settings in which the learner finds himself subsequently.

It was assumed that in more traditional, lecture-discussion approaches to educational relations, the aspects of behavior which are primarily affected by the reinforcement contingencies in the situation are the learner's verbal statements about effective interpersonal behavior. These are at issue in laboratory training as well, but the norms in laboratory training also promote examination of one's own and others' behavior. This led to the expectation that laboratory training would be more likely to show effects on behavior and on self-perceptions than would a more traditional approach. Less difference between the two types of program was expected for measures of beliefs about interpersonal behavior. The data were supportive of these expectations. On measures of beliefs about effective interpersonal behavior, relatively high similarity between experimental and control sessions was found when people were asked to describe what they felt constituted effective interpersonal behavior (in the MEQ) but relatively low similarity was found when people were asked to describe what they themselves would do in difficult interpersonal situations (in the MBQ).

The uniqueness of the laboratory--the fact that it was in many respects very different from anything else in the program--makes it reasonable to suppose that there was considerable inconsistency between its reinforcement contingencies, and those in the remaining five weeks. The data were consistent with this supposition.

The self-perception measures for the experimental sessions showed pronounced shifts from before to after the laboratory, followed by moderate shifts back in the other direction. The participants tended

to see themselves as having changed substantially during the laboratory in directions consonant with its goals, but saw themselves during the remaining five weeks as shifting back in the other direction. The fact that the control session participants saw themselves as having increased on openness to information from others, but not on competence to deal with feelings was consistent with the nature of the program in the control sessions--considerable emphasis was put on exploration of new ideas and new ways of viewing business problems, but very little emphasis was placed on exploration of feelings.

Assuming that the norms of the lecture-discussion approach ran counter to those of the laboratory program in many respects, the participants in the laboratory session were presumably faced with a difficult problem of transition from the first week to the remainder of the program. Many of the things they felt they had learned the first week were not considered valid learnings by the faculty who succeeded the laboratory staff, and the program did not have built-in procedures for helping the participants to deal with this delemma. For the laboratory to be of miximum value in such a program, it may be necessary to develop a different learning model. One possibility might be to follow up the week of laboratory training with occasional short laboratory periods (perhaps a half day) at intervals in the remaining weeks of the program. These short laboratories could focus on the problem of transferring learning from one setting to another, and of dealing with conflicting goals and norms of different phases of the program.

The problem of transferring learning was apparent in the behavior measures of conformity. There was a striking difference in behavior between the T-groups and case-discussion groups. In T-groups, the mean level of conformity was less than 25% whereas the mean level for case discussion groups was higher than 40%. In both experimental sessions, the average percentage of conformity rose approximately 20% when transferring from laboratory to case discussions. Although, on the whole, case-discussion groups in the experimental sessions had a lower mean level of conformity than case groups in the control sessions (38% in the former, 46% in the latter), a learning model which encouraged exploration of the transfer-of-learning problems might result in more pronounced differences.

If the participants had difficulty transferring learning from the laboratory to the remainder of the program, it seems likely that they would have even more difficulty transferring learning back to their home organization. Within the executive program, the participants who had experienced laboratory education had two advantages which might be expected to facilitate transfer of learning to case discussions: (1) everyone in the program had been in a T-group; (2) they were not "playing for keeps" in the program, in the sense that there was no way to fail and no report was sent back to their home organization. Apparently, these were not entirely sufficient, and this left little reason to be optimistic about the participants' ability to transfer substantial learning from the laboratory to their home organization. To check this, an attempt was made to replicate Bunker's (1965) study using the participants in Study I. Using Bunker's

instrument and scoring according to his categories (using the published description of their definition), no reliable differences between participants in the experimental and control sessions were found with respect to behavior change as perceived by business colleagues. (On several of the Bunker categories, there were reliable differences in self-perception, with the participants in the experimental session tending to see themselves as having changed more than the control participants in directions consonant with laboratory training goals.) Not too much weight can be placed on such a null finding--particularly since approximately half of the participants did not participate in the follow-up--but the data certainly did not suggest marked differences in amount or type of change between the experimental and control groups. It is hardly safe to conclude that laboratory training has no differential effect on participants' subsequent on-the-job behavior, since some studies (reviewed most recently by House, 1967) have suggested that such changes do take place. But an adequate understanding of the effects of T-groups on job-related behavior probably awaits research which takes seriously characteristics of the training, of the individual participant, and of the organization to which an individual returns.

REFERENCES

Argyris, C. Interpersonal Competence and Organizational Effectiveness. Homewood, Ill.: Irwin-Dorsey, 1962.

Argyris, C. Explorations in Interpersonal Competence--I. Journal of Applied Behavioral Science, 1965, I, 58-83. (a)

Argyris, C. Explorations in Interpersonal Competence--II. Journal of Applied Behavioral Sceince, 1965, 1, 255-269. (b)

Argyris, C. Organization and Innovation. Homewood, Ill.: Irwin, 1966.

Bunker, D. R. The effect of Laboratory Education upon Individual Behavior. In Schein, E. H. and Bennis W. G. (Eds.). Personal and Organizational Change through Group Methods. New York: Wiley, 1965.

House, R. J. T-group Education and Leadership Effectiveness: A Review of the Empiric Literature and a Critical Evaluation. Personal Psychology, 1967, 20, 1-32.

Hull, C. L. A Behavior System. New Haven: Yale University Press, 1952.

Lord, F. Elementary models for measuring change. In Harris, C. Problems in Measuring Change. Madison: University of Wisconsin Press, 1963.

Miller, N. E. Theory and experiment relating psychoanalytic displacement to stimulus response generalization. Journal of Abnormal and Social Psychology, 1948, 43, 155-178.

Skinner, B. F. Science and Human Behavior. New York: MacMillan, 1953.

Solomon, R. L. Extension of control group design. Psychological Bulletin, 1949, 46, 137-150.

Valiquet, M. I. Individual change in a Management Developement Program Journal of Applied Behavioral Science, 1968, in press.

Winer, B. Statistical Principles in Experimental Design. New York: McGraw-Hill, 1962.

FOOTNOTES

[1]The author is extremely grateful to Professor Chris Argyris, who was immensely helpful through all phases of the research. The research would not have been possilbe without the help and support of the director of the executive program which provided the data, and of the staff members and participants who sacrificed precious time to facilitate the research effort. The report is undoubtedly improved as a result of the comments on earlier versions provided by Professors Clayton P. Alderfer, J. Richard Hackman, Douglas T. Hall, Roger Harrison, Edward E. Lawler, 3rd, and Victor H. Vroom.

[2]Now at Graduate School of Industrial Administration, Carnegie-Mellon University.

[3]Learning theory here means any learning theory which includes postulates basically similar to Thorndike's (1913) Law of Effect. Examples include Hull (1952) and Skinner (1953).

[4]It is not assumed that human beings always bring their behavior into line with their attitudes rather than the converse. It is assumed only that there is a tendency toward consonance between attitudes and behavior (Festinger, 1957), and that it is likely to be easier to change attitudes learned in a brief training program than to change behavior developed over much longer periods of time.

[5]This assumption derives from Miller's (1948) theory of stimulus generalization--i.e., the more similar two stimulus situations are, the more likely it is that they will evoke the same responses. This, of course, implies that the less similar the stimulus situations, the less similar the responses. The same general idea can be easily

stated in different terminology, for those who find S-R concepts unpalatable.

[6]In the design used here, one half of the participants in the experimental session received the APB and MBQ at all three administrations; one quarter received the two instruments only at the first and third administrations, and the remaining participants received the instruments only at the second and third administrations. There was no evidence that number of administrations had any effect on the scores. A general discussion of this type of research design appears in Solomon (1949).

[7]The F-ratios are based on tests on simple effects within an overall three-factor analysis of variance with repeated measures. The independent variables were experimental vs. control, study I vs. study II, and initial vs. final administration. For a discussion of this type of design, see Winer (1962, chapter 7).

Table 1:

Research Design[1]

| | | Before Program | During Human Relations | After Human Relations | Final |
|---|---|---|---|---|---|
| STUDY 1 | Experimental | APB<br>MBQ | Behavior Scores<br>QOGF | APB<br>MBQ<br>Behavior Scores<br>QOGF | APB<br>MBQ<br>Behavior Scores<br>QOGF |
| | Control | APB<br>MBQ | Behavior Scores<br>QOGF | Behavior Scores<br>QOGF | APB<br>MBQ<br>Behavior Scores<br>QOGF |
| STUDY 2 | Experimental | APB<br>MEQ | Behavior Scores | APB<br>MEQ<br>Behavior Scores<br>QOGF | APB<br>MEQ<br>Behavior Scores<br>QOGF |
| | Control | APB<br>MEQ | Behavior Scores | APB<br>MEQ<br>Behavior Scores<br>QOGF | APB<br>MEQ<br>Behavior Scores<br>OQGF |

[1]The chart indicates the points at which measures were obtained in each of the sessions studied. The meaning of each of the abbreviations is indicated in the text.

Table 2:

APB Competence to Deal with Feelings

Analysis of Covariance[a]

| Effect | Sum Squares | df | Mean Square | F-ratio | |
|---|---|---|---|---|---|
| Experimental vs. Control | 59.221 | 1 | 59.221 | 7.28 | $p<.01$ |
| Replications | 14.561 | 1 | 14.561 | 1.80 | $p<.25$ |
| Interaction | 3.366 | 1 | 3.366 | | |
| Error | 1284.983 | 158 | 8.133 | | |

[a]Test of differences on final measure, using pre-measure as covariate. Unweighted means analysis used to compensate for unequal sample sizes (Winer, 1962). Replication is taken as a random factor, and it is assumed that there is no interaction between treatment and replications.

Table 3:

APB Openness

Analysis of Covariance[b]

| Effect | Sum Squares | df | Mean Square | F-ratio | |
|---|---|---|---|---|---|
| Experimental vs. Control | 0.310 | 1 | 0.310 | | |
| Replications | 26.953 | 1 | 26.953 | 4.64 | K $p<.05$ |
| Interaction | 4.777 | 1 | 4.777 | | |
| Error | 916.748 | 158 | 5.802 | | |

[b]See footnote a for Table 2.

Table 4:

MBQ Pyramidal Values

Analysis of Covariance[1]

| Effect | Sum Squares | df | Mean Square | F-ratio | |
|---|---|---|---|---|---|
| Experimental vs. Control | 556.51 | 1 | 556.51 | 16.79 | $p<.001$ |
| Error | 2121.64 | 64 | 33.15 | | |

[1]This analysis differs from the previous ones in that it involves only from Study I, and the replications factor is therefore absent.

Table 5:

MEQ Confrontation of Interpersonal Issues

Analysis of Covariance

| Effect | Sum Squares | df | Mean Square | F-ratio | |
|---|---|---|---|---|---|
| Experimental vs. Control | 2789.256 | 1 | 2789.356 | 1.55 | $p<.25$ |
| Error | 161964.383 | 90 | 1799.6000 | | |

Table 6:

MEQ Emphasis on Formal Power

Analysis of Covariance

| Effect | Sum Squares | df | Mean Square | F-ratio | |
|---|---|---|---|---|---|
| Experimental vs. Control | 3659.698 | 1 | 3659.358 | 6.243 | $p<.05$ |
| Error | 52753.866 | 90 | 586.154 | | |

Figure 1:

APB Competence to Deal with Feelings

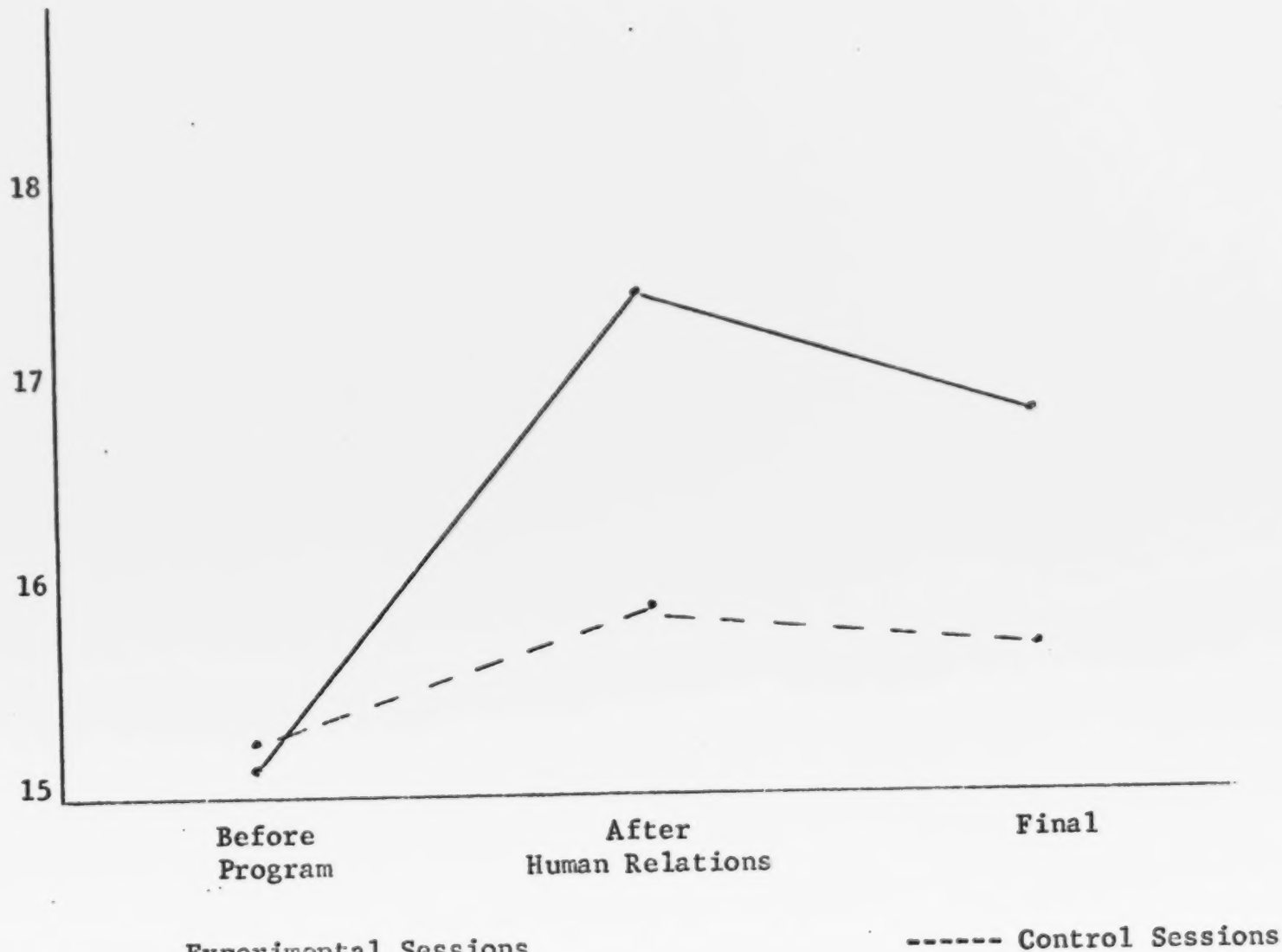


Figure 2:
APB Openness

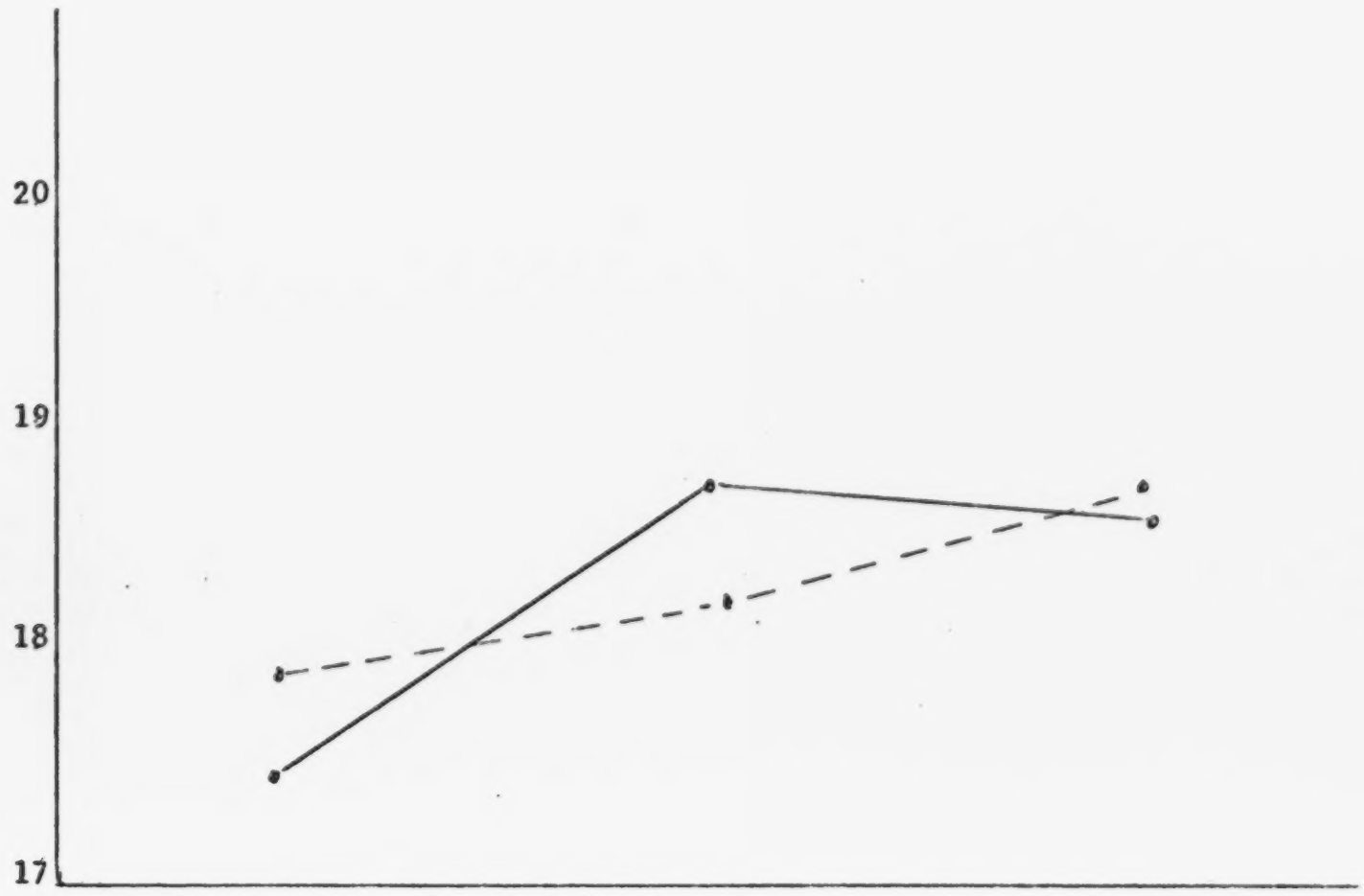
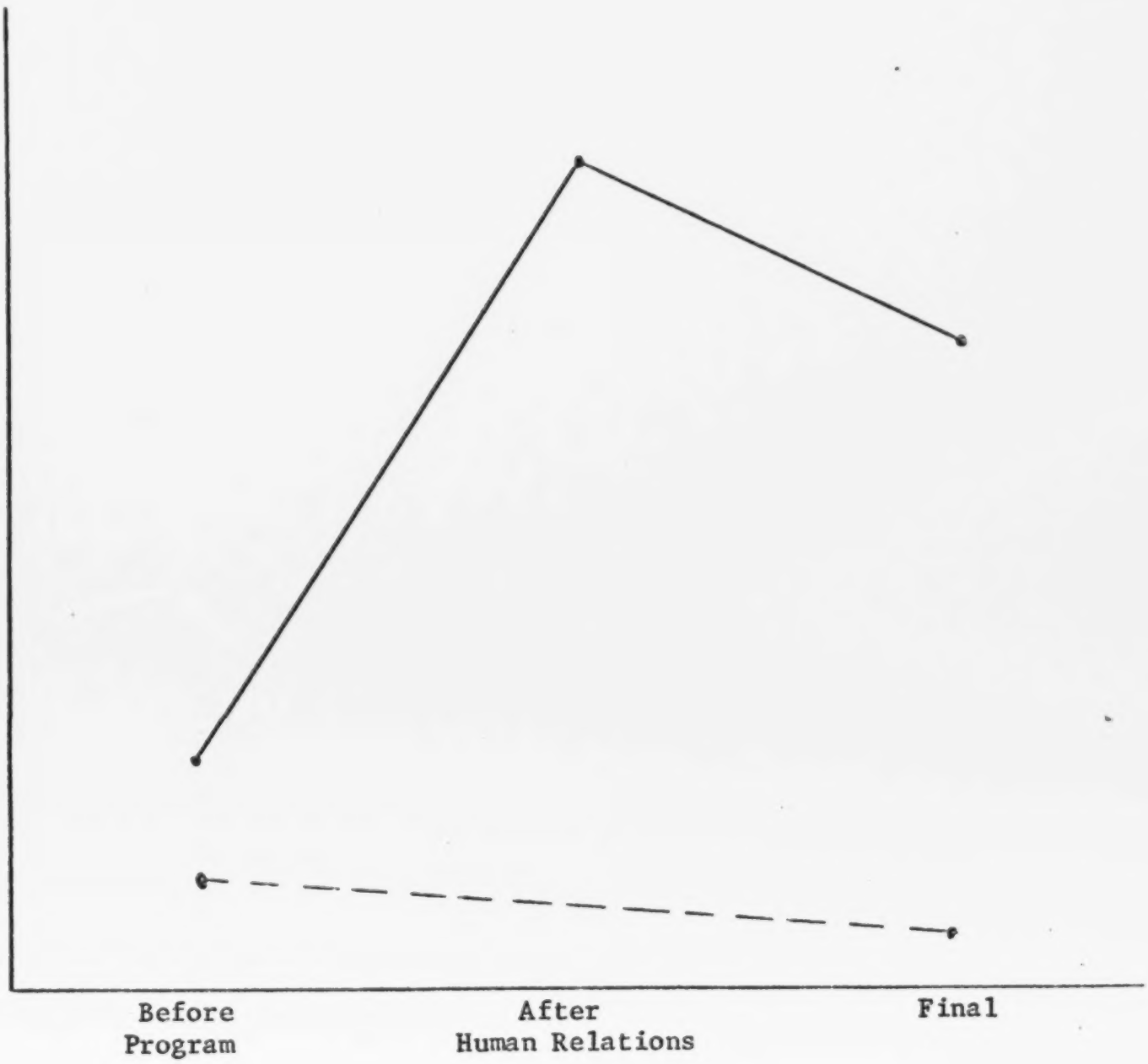


Figure 3:

MBQ De-emphasis on Pyramidal Values




(The second of the three administrations was omitted in the control session).

_____ Experimental session ------Control session

Figure 4:

MEQ Confrontation of Interpersonal Issues

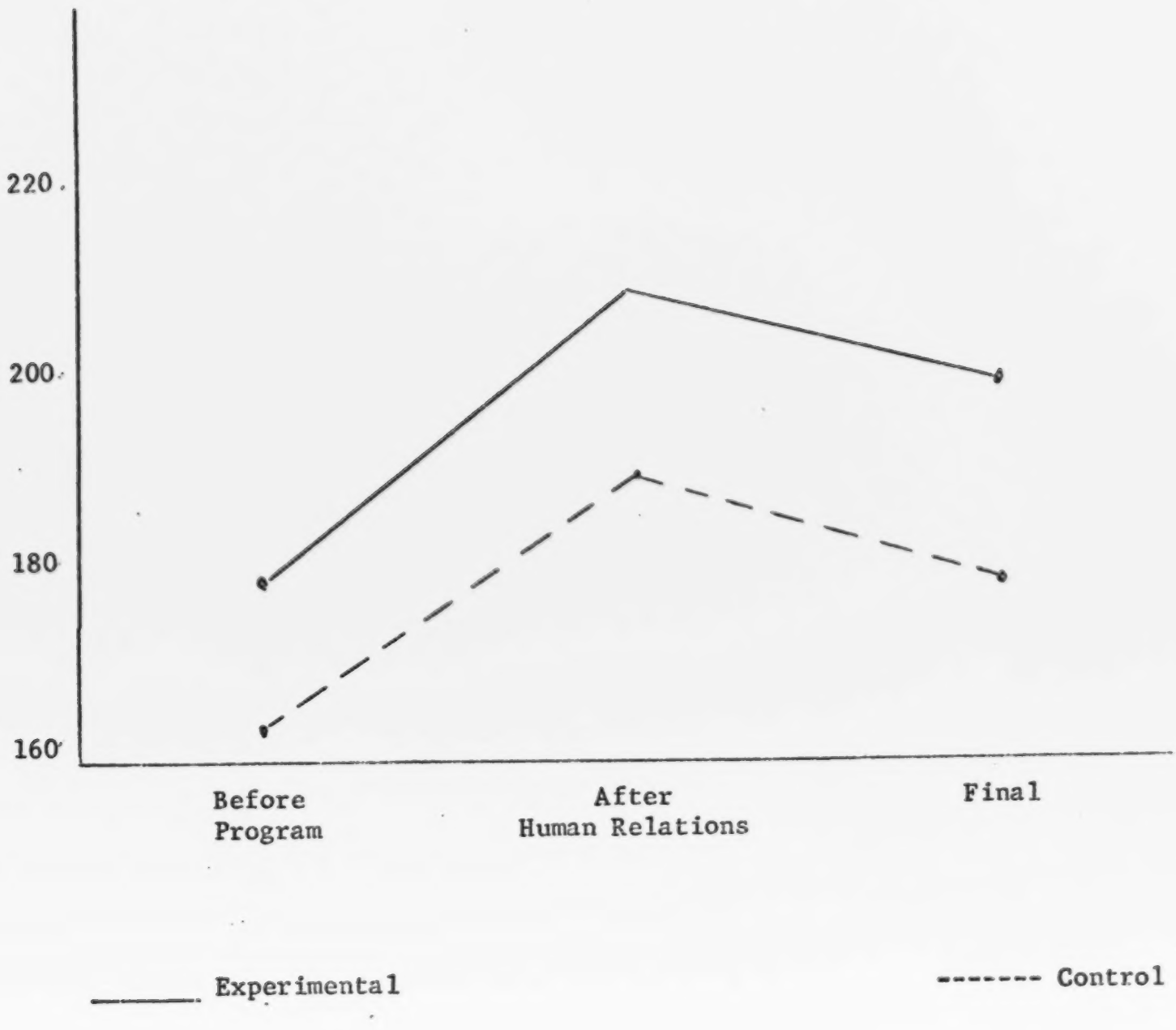


Figure 5:

MEQ Emphasis on Formal Power

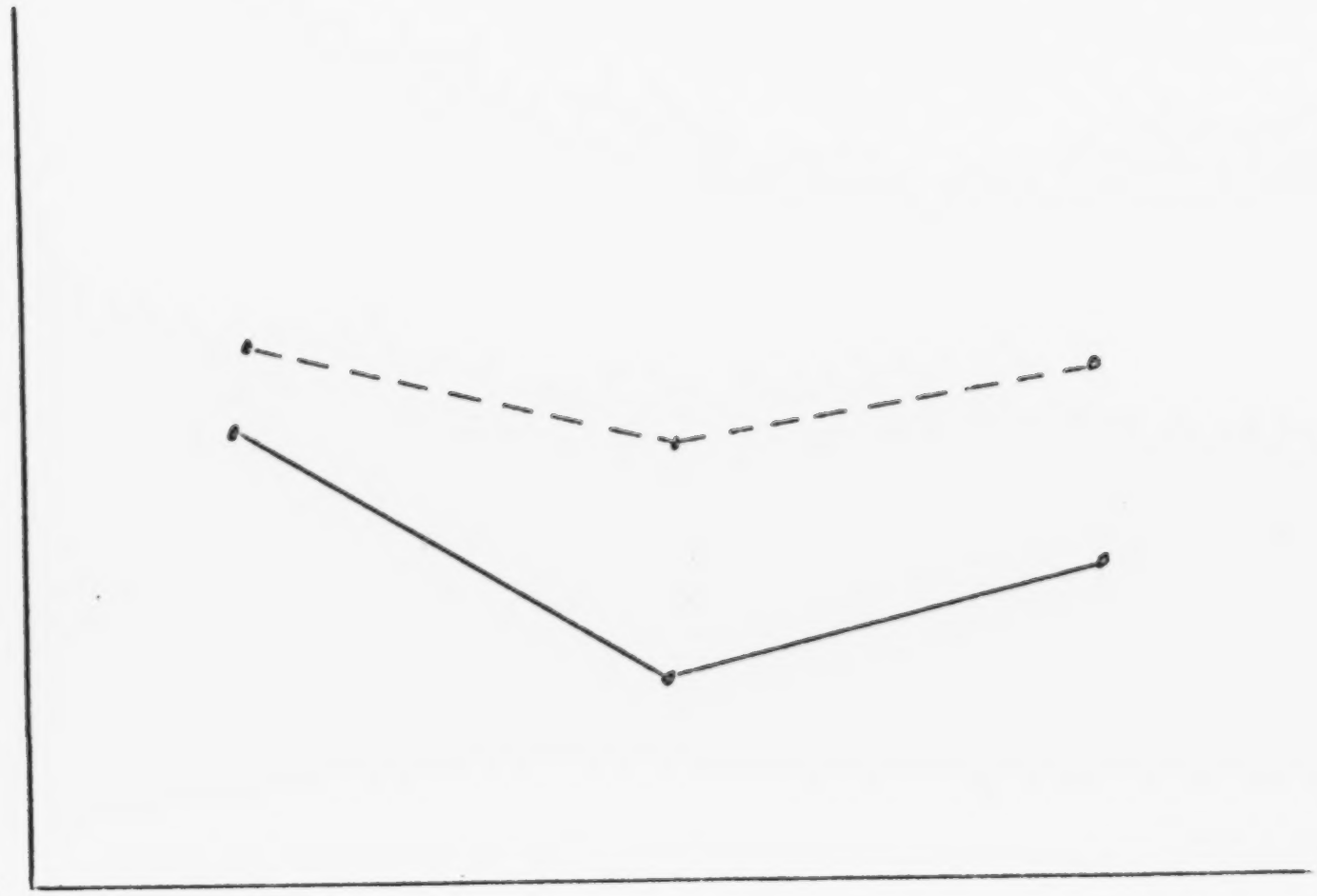
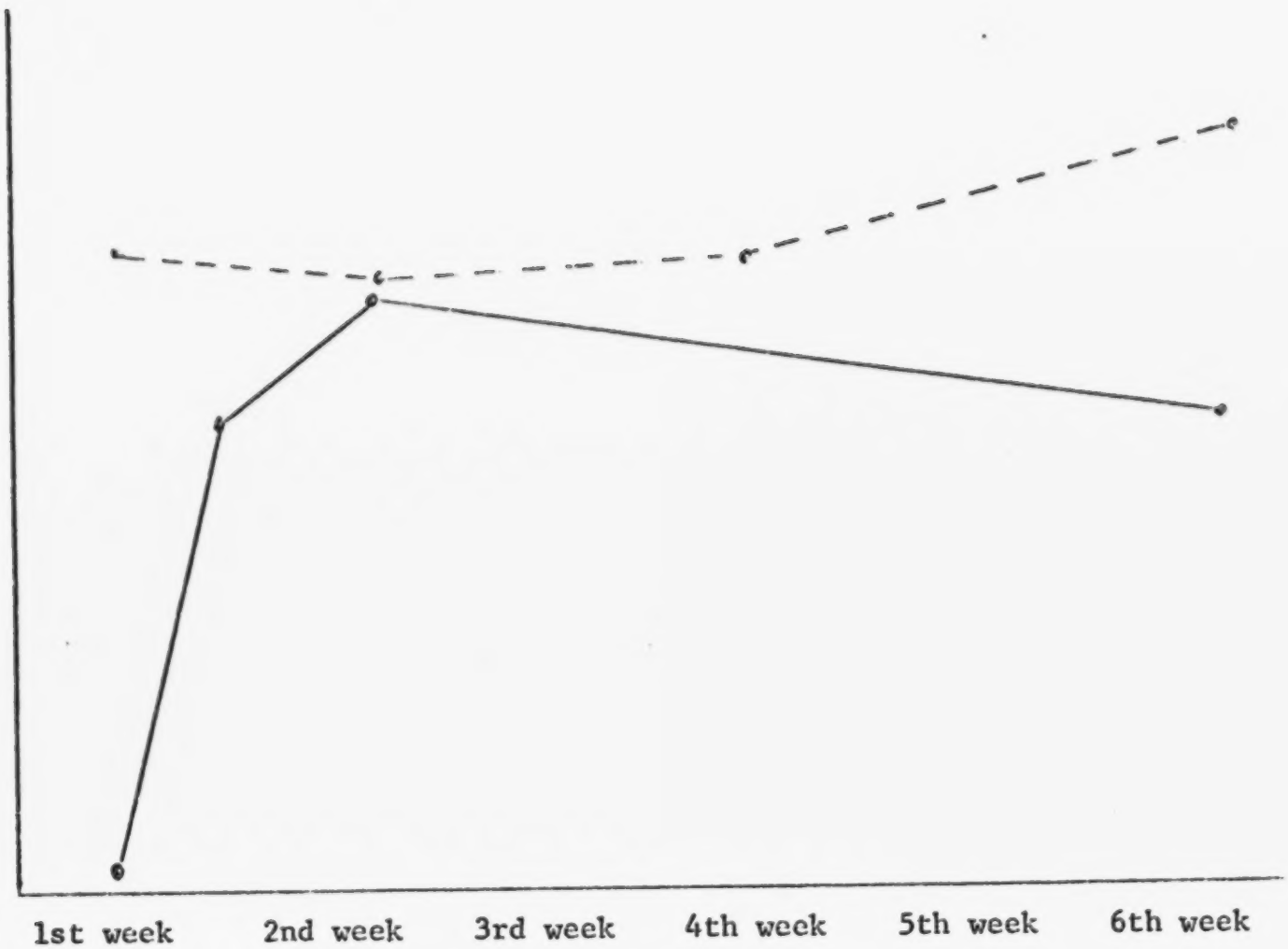


Figure 6:

QOGF Integration for Study I




(The first two points for the experimental group represent middle and late T-group meetings. All other data is from small, case-discussion groups. No data were available from the fourth week for the experimental session.)

_____ Experimental group

------ Control group

Figure 7:

QOGF Integration for Study II

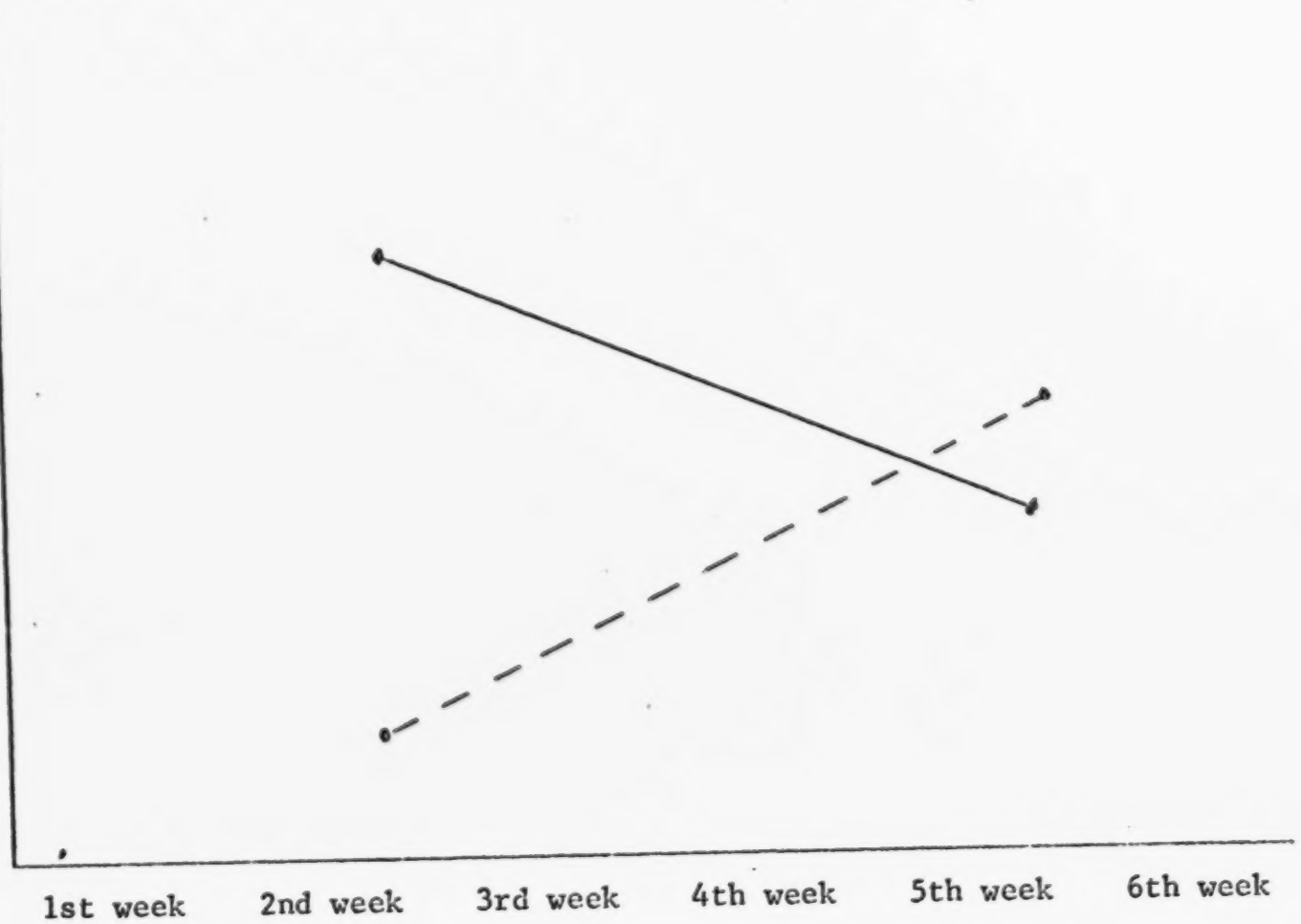


Figure 8:

Conformity Scores for Laboratory Groups

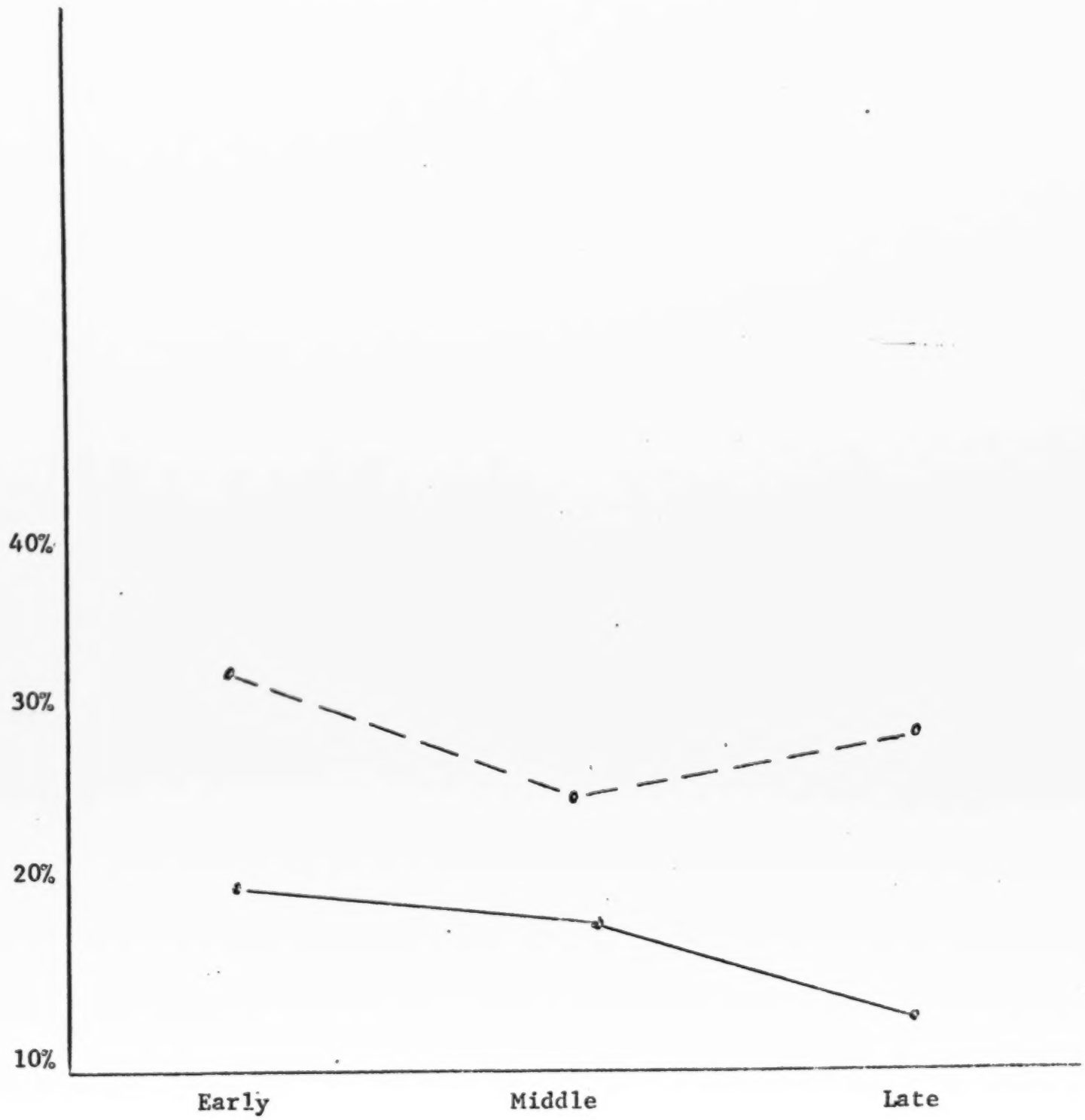


Figure 9:

Conformity Scores for Study I

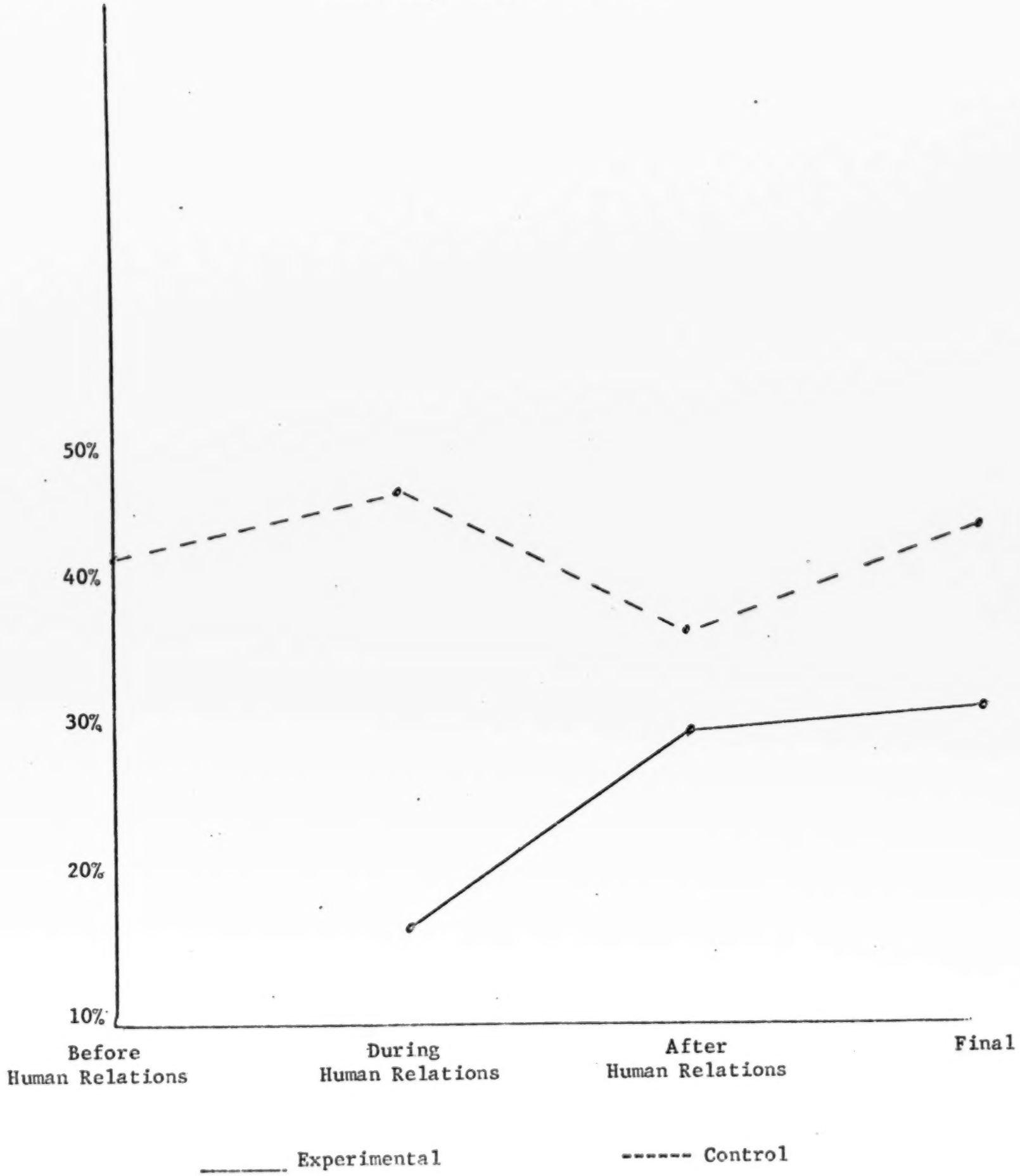
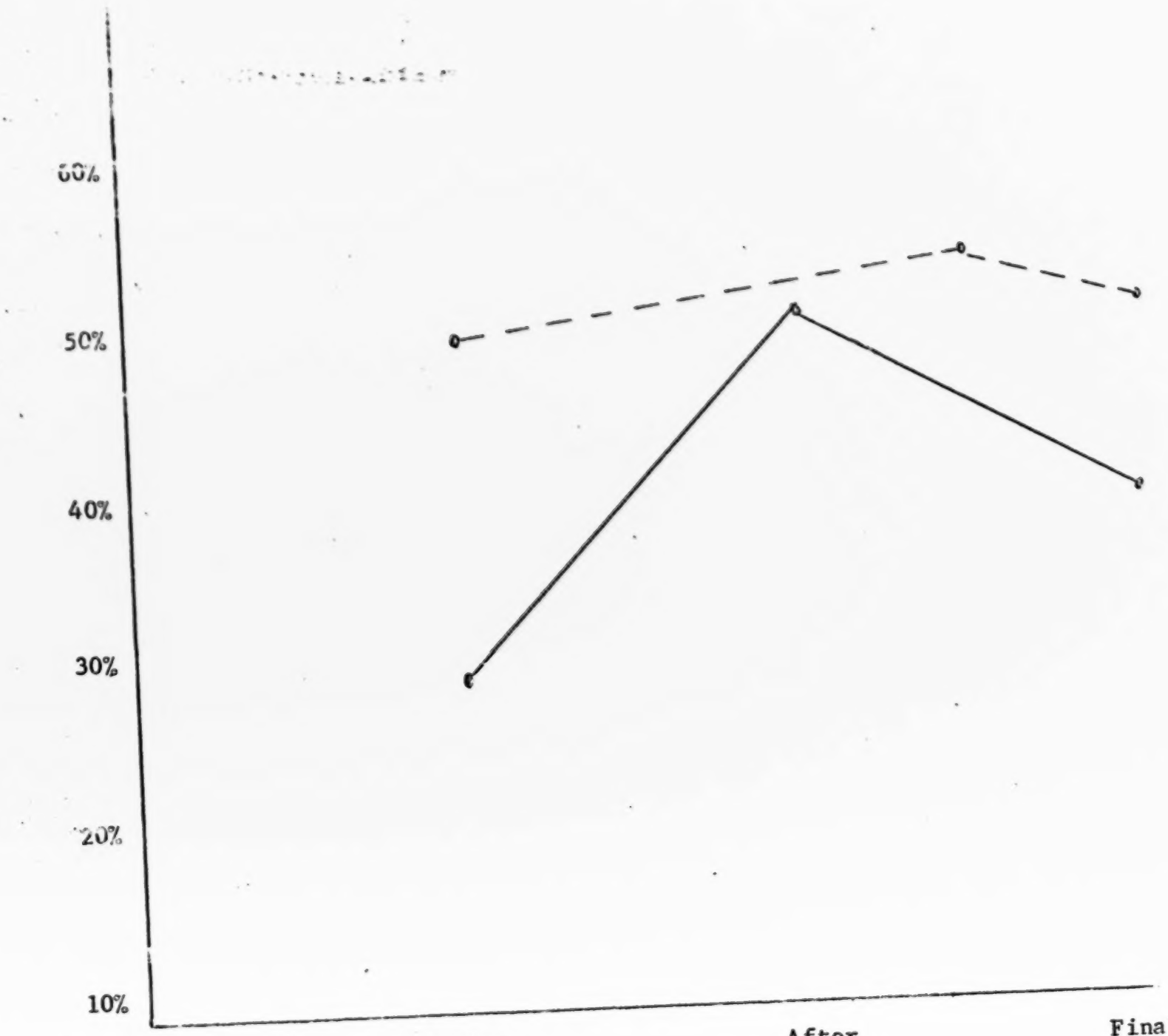


Figure 10:

Conformity Scores for Study II




ERIC Clearinghouse
DEC11 1968
on Adult Education